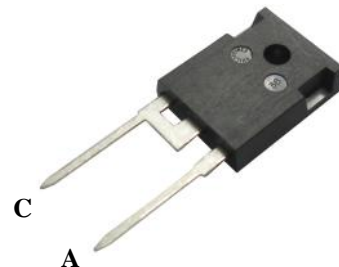


**Fast Recovery 15A, 600V Epitaxial Diodes,  
 in TO247 B1 version**
**APPLICATIONS**

- Freewheeling diode (FWD)
- Snubber diode
- Clamp diode
- Power factor correction (PFC)
- Plating power supply
- Ultrasonic cleaner and welder
- Converter and chopper
- Uninterruptible power supplies
- High speed rectifiers
- Inductive heating and melting applications


**FEATURES**

- Ultrafast recovery time
- Soft recovery characteristics
- Low recovery loss
- Low forward voltage
- High surge current capability
- Low leakage current
- Pb-free finished; **RoHS compliant**

**MAXIMUM RATINGS**, at  $T_c = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Value	Units
Repetitive peak reverse voltage	$V_{RRM}$	600	V
Average forward current $T_c = 110^\circ\text{C}$	$I_{F(AV)}$	15	A
Surge non-repetitive forward current $T_j = 45^\circ\text{C}$ , $t_p = 10$ ms, 50Hz, Sine	$I_{FSM}$	150	
Power dissipation	$P_D$	83	W
Operating junction and storage temperature	$T_j, T_{stg}$	-40... +150	$^\circ\text{C}$

**Thermal Characteristics**

Parameter	Symbol	Max. Value	Units
<b>Characteristics</b>			
Thermal resistance, junction to case	$R_{thJC}$	1.5	$^\circ\text{C}/\text{W}$

**Electrical Characteristics, at  $T_j = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
<b>Static Characteristics</b>					
Reverse leakage current $V_R = 600\text{V}$ $V_R = 600\text{V}, T_j = 150^\circ\text{C}$	$I_R$	-	-	10 250	$\mu\text{A}$
Forward voltage drop $I_F = 15\text{A}$ $I_F = 15\text{A}, T_j = 150^\circ\text{C}$	$V_F$	-	1.5 1.2	1.8 -	V

**Electrical Characteristics, at  $T_j = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
<b>Dynamic Characteristics</b>					
Reverse recovery time $V_R = 300\text{V}, I_F = 15\text{A}, di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 300\text{V}, I_F = 15\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 150^\circ\text{C}$	$t_{rr}$	-	49 130	-	ns
Reverse recovery charge $V_R = 300\text{V}, I_F = 15\text{A}, di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 300\text{V}, I_F = 15\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 150^\circ\text{C}$	$Q_{rr}$	-	40 640	-	nC
Maximum reverse recovery current $V_R = 300\text{V}, I_F = 15\text{A}, di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 300\text{V}, I_F = 15\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, T_j = 150^\circ\text{C}$	$I_{rrm}$	-	2.5 10	-	A

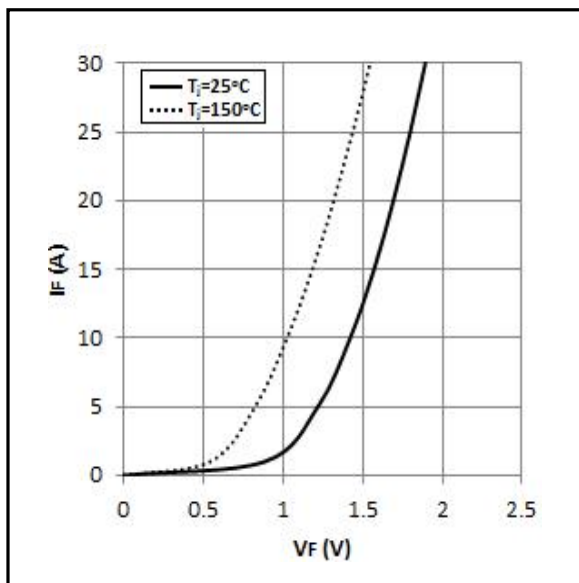
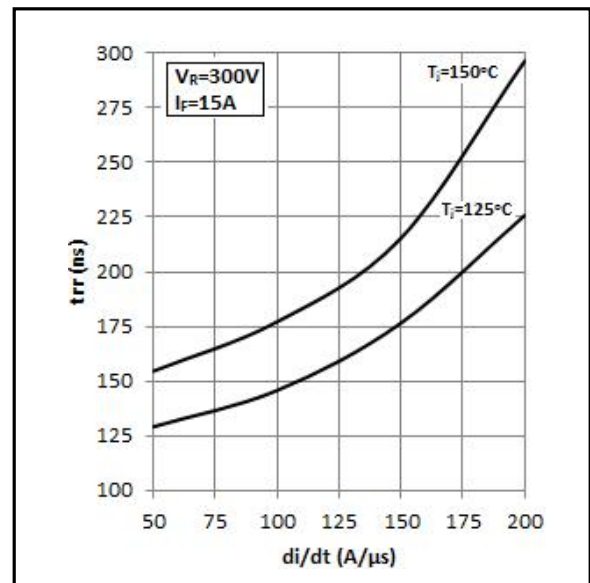
**Figure 1 – Typical Forward voltage drop vs forward current**

**Figure 2 – Reverse recovery time vs  $di_F/dt$** 


Figure 3 – Reverse recovery charge vs  $di_f/dt$

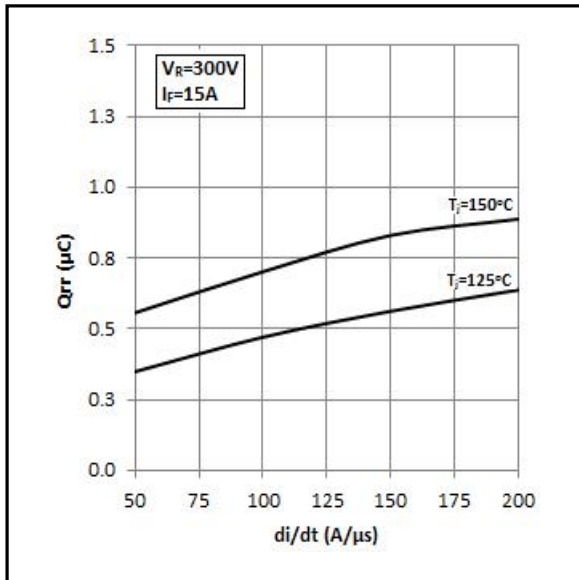


Figure 4 – Maximum reverse recovery current vs  $di_f/dt$

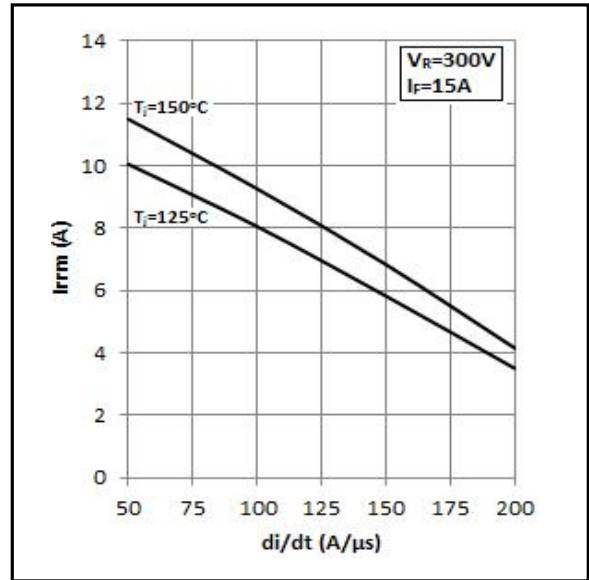
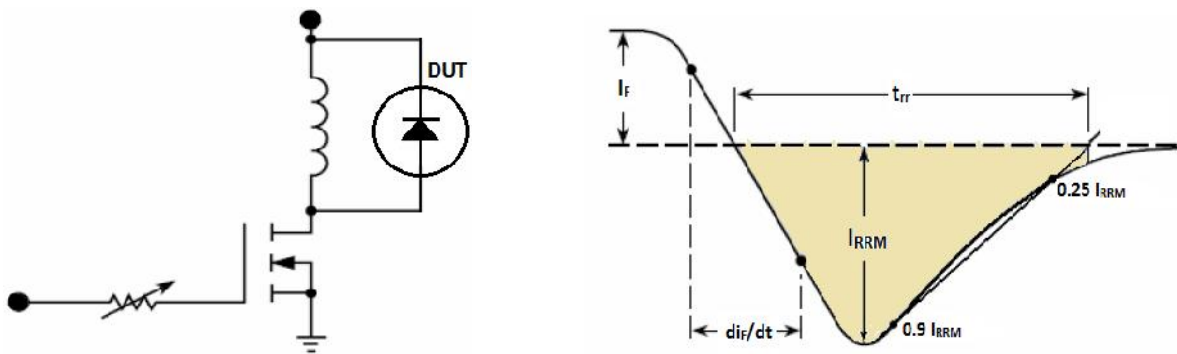
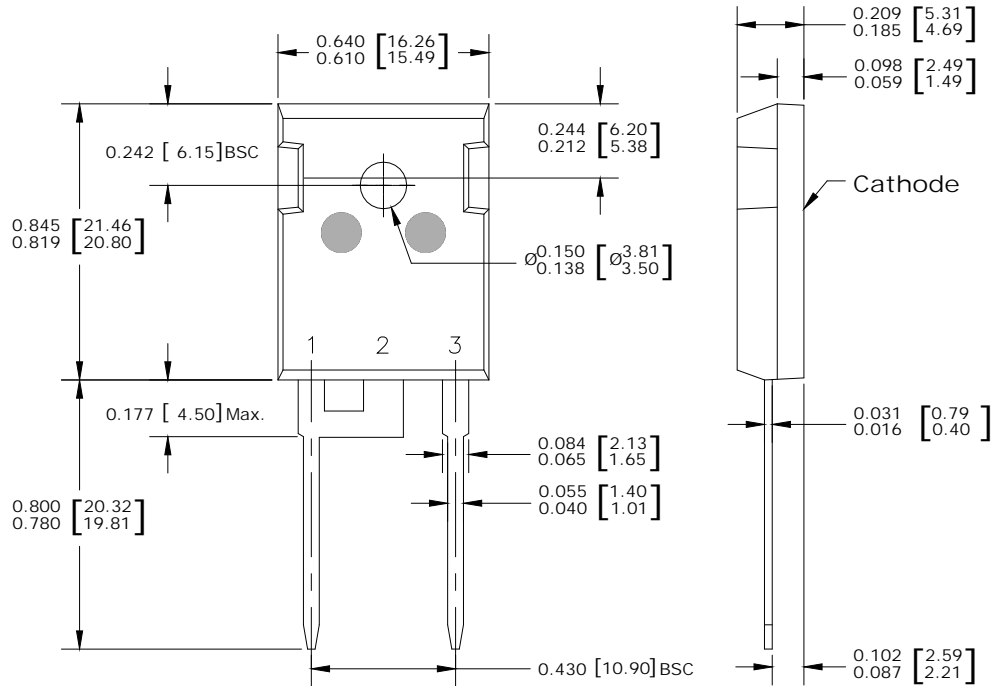


Figure 5 – Diode Reverse Recovery Test Circuit and Waveform



**Package Outline Drawing**



**Disclaimer**

These specifications may not be considered as a guarantee of components characteristics. Components have to be tested depending on intended application as adjustments may be necessary. The use of **iQXPRZ Power Inc.** components in life support appliances and systems are subject to written approval of **iQXPRZ Power Inc.**